

REMARKS

Reconsideration is requested.

Claims 1-40 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-40 of U.S. Patent No. 6,715,081. Enclosed herewith is a Terminal Disclaimer which obviates the rejection.

The Examiner has objected to Paragraph 24 of the specification as being superfluous. Applicant has deleted Paragraph 24, thus obviating the rejection.

Claims 8-13 and 39-40 have been cancelled to reduce the number of issues under consideration.

Claims 1-5, 8, 24-28 and 39 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,863,232 to Kwa.

Claim 1, as amended, recites a system comprising a housing; a circuit board supported in the housing; a plurality of slot connectors supported on the circuit board; a first card in one of the slot connectors; a first circuit component mounted on the first card; a second card in another one of the slot connectors; a second circuit component mounted on the second card; and an optical interconnect coupling the first card to the second card, the first circuit component being configured to communicate with the second circuit component via the optical interconnect, the optical interconnect being entirely supported by the first and second cards, whereby the optical interconnect does not pass

through the slot connectors so that interference that could otherwise be caused by signals to and from the first circuit component is impeded.

The Kwa reference fails to teach or suggest the optical interconnect being entirely supported by the first and second cards. Instead, the Kwa reference discloses optical connector parts 120, and 150 where optical connector part 120 is mounted to a card guide 112.

Applicants' design does not require a card guide to support an optical connector part and allows retrofitting of new cards into existing computers. Applicants' design is also lighter and less complex.

Further, it would not be obvious to modify the Kwa reference to have an optical interconnect entirely supported by the first and second cards because the Kwa reference teaches away from any such design at Col. 1, lines 45-60.

Therefore, claim 1 is allowable.

As claims 2-7 depend on claim 1, they too are allowable.

Claim 24, as amended, recites a method of assembling a system, the method comprising supporting a circuit board in a housing; supporting a plurality of slot connectors on the circuit board; mounting a first circuit component on a first card; inserting the first card into a first one of the slot connectors; mounting a second circuit component on a second card; inserting the second card into a second one of the slot connectors; and flexibly optically coupling the first card to the second card for optical communications between the first circuit component and the second circuit component, using a first optical connector supported by the first card and completely movable with the first card, a second optical

connector supported by the second card and completely movable with the second card, and an optical cable coupled between the first and second optical connectors, whereby the flexible optical interconnect does not pass through the slot connectors so that interference that could otherwise be caused by signals to and from the first circuit component is impeded.

The Kwa reference fails to teach or suggest using a first optical connector supported by the first card and completely movable with the first card, a second optical connector supported by the second card and completely movable with the second card in combination with the other features of claim 24.

Further, it would not be obvious to modify the Kwa reference to have an optical interconnect entirely supported by the first and second cards because the Kwa reference teaches away from any such design at Col. 1, lines 45-60.

Therefore, claim 24 is allowable.

As claims 25-30 depend on claim 24, they too are allowable.

Claims 6, 7, 11-16, 18-21, 23, 29-33 and 35-37 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,863,232 to Kwa in view of U.S. Patent No. 4,704,599 to Kimmel and publication titled "SLDRAM: High-Performance Open-Standard Memory" by Gillingham ("Gillingham").

Claim 14 recites a computer comprising a housing; a circuit board supported in the housing; a plurality of connectors supported on the circuit board; a first card in a first one of the connectors; a processor supported by the first card; a second card in a second one of the connectors; a synchronous link DRAM memory supported by the second card; a power supply in the housing;

conductors coupling the power supply to the processor via the first connector, the conductors including circuit traces on the first card; conductors coupling the power supply to the memory via the second connector, the conductors including circuit traces on the second card; and an optical interconnect coupling the processor to the memory for data communications, the optical interconnect being within the housing, in use, wherein the optical interconnect does not pass through the connectors.

It would not be obvious to substitute a portion of the structure of Kimmel for portions of the structure of Kwa because there is no teaching in the references themselves of how the components should be combined or of which components of Kimmel should be combined with which components of Kwa. There are no teachings in the references themselves which teach that there would be any advantage resulting from selecting portions of the structure of Kimmel and integrating that structure somehow into the structure of Kwa. The mere fact that the structures of the references could possibly be somehow modified to result in the claimed structure does not render the claimed structure obvious unless the references themselves suggest the desirability of the modification. See *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

Evidence of a suggestion to combine may flow from the prior art references themselves, from the knowledge of one skilled in the art, or from the nature of the problem to be solved. However, this range of sources does not diminish the requirement for actual evidence. Further, the showing must be

clear and particular. See *In re Dembiczak*, 175 F.3d 994, 998, 50 USPQ2d 1614, 1616 (Fed. Cir. 1999).

It would not be obvious to take portions of the structure of a combination of Kimmel and Kwa and further combine that combination with portions of the structure of Gillingham because there is no teaching in the references themselves of how the components should be combined or of which components of Gillingham should be selected and combined with components of Kimmel and Kwa. There are no teachings in the references themselves which teach that there would be any advantage resulting from selecting portions of the structure of Gillingham and integrating that structure somehow into the structure of Kimmel and Kwa.

Even if the references could be combined, it would be unclear which components should be coupled optically as opposed to through circuit traces. There is no teaching or suggestion in the references as to what sort of signals should be sent optically instead of through circuit traces.

It would not be obvious to couple a processor supported by the first card to a synchronous link DRAM memory supported by the second card using an optical interconnect because one of ordinary skill in the art given the Kwa, Kimmel, and Gillingham references would most likely put a memory and processor on a common card, coupled by circuit traces, as is conventional, since there is nothing in any of the references that would suggest that someone do otherwise.

Therefore, claim 14 is allowable.

As claims 15-18 depend on claim 14, they too are allowable.

Claim 19 recites a computer comprising a housing; a circuit board supported in the housing; a plurality of connectors supported on the circuit board; a first card in a first one of the connectors; a first integrated circuit supported by the first card; a second card in a second one of the connectors; a second integrated circuit supported by the second card; a power supply in the housing; conductors coupling the power supply to the first integrated circuit via the first connector, the conductors including circuit traces on the first card; conductors coupling the power supply to the second integrated circuit via the second connector, the conductors including circuit traces on the second card; and an optical interconnect coupling the first integrated circuit to the second integrated circuit for data communications, the optical interconnect being within the housing, in use, wherein the optical interconnect does not pass through the connectors.

It would not be obvious to combine Kimmel, Kwa and Gillingham for the reasons provided above.

Even if the references could be combined, it would be unclear which components should be coupled optically as opposed to through circuit traces. There is no teaching or suggestion in the references as to what sort of signals should be sent optically instead of through circuit traces.

Therefore, claim 19 is allowable.

As claims 20-23 depend on claim 19, they too are allowable.

Claim 31 recites a method comprising supporting a circuit board in a housing; supporting a plurality of slot connectors on the circuit board; supporting a processor on a first card having an edge connector; inserting the edge connector of the first card into a first one of the slot connectors to support the first card from the circuit board; providing a second card having an edge connector configured for sliding receipt in a second one of the slot connectors; supporting a synchronous link DRAM memory on a second card having an edge connector; inserting the edge connector of the second card into a second one of the slot connectors to support the second card from the circuit board; supporting a power supply in the housing; coupling the power supply to the processor via the first slot connector, the coupling including using circuit traces on the first card extending from the edge connector of the first card toward the processor; coupling the power supply to the memory via the second slot connector, the coupling including using circuit traces on the second card extending from the edge connector of the second card toward the memory; and optically coupling the processor to the memory for data communications using an optical interconnect within the housing, wherein the optical interconnect does not pass through the slot connectors.

It would not be obvious to combine Kimmel, Kwa and Gillingham for the reasons provided above.

Even if the references could be combined, it would be unclear which components should be coupled optically as opposed to through circuit traces. There is no teaching or suggestion in the references as to what sort of signals should be sent optically instead of through circuit traces.

Therefore, claim 31 is allowable.

As claims 32-34 depend on claim 31, they too are allowable.

Claim 35 recites a method comprising supporting a circuit board in a housing; supporting a plurality of slot connectors on the circuit board; supporting a first integrated circuit on a first card having an edge connector; inserting the edge connector of the first card into a first one of the slot connectors to support the first card from the circuit board; providing a second card having an edge connector configured for sliding receipt in a second one of the slot connectors; supporting a second integrated circuit on a second card having an edge connector; inserting the edge connector of the second card into a second one of the slot connectors to support the second card from the circuit board; supporting a power supply in the housing; coupling the power supply to the first integrated circuit via the first slot connector, the coupling including using circuit traces on the first card extending from the edge connector of the first card toward the first integrated circuit; coupling the power supply to the second integrated circuit via the second slot connector, the coupling including using circuit traces on the second card extending from the edge connector of the second card toward the second integrated circuit; and optically coupling the first integrated circuit to the second integrated circuit for data communications using an optical interconnect within the housing, wherein the optical interconnect does not pass through the slot connectors.

It would not be obvious to combine Kimmel, Kwa and Gillingham for the reasons provided above.

Even if the references could be combined, it would be unclear which components should be coupled optically as opposed to through circuit traces. There is no teaching or suggestion in the references as to what sort of signals should be sent optically instead of through circuit traces.


Therefore, claim 35 is allowable.

As claims 36-38 depend on claim 35, they too are allowable.

The Examiner is requested to phone the undersigned at any time in the event that the next Office Action is one other than a Notice of Allowance.

Respectfully submitted,

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